

Application No. 09/896,812

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A method for modulating the plasma circulation half-life of an active agent, said method comprising:

(a) providing a liposome having free active agent and precipitated active agent encapsulated therein; and

(b) varying the amount of said active agent that is precipitated in said liposome.

2. (Withdrawn) The method of claim 1, wherein step (b) comprises varying said active agent to lipid ratio.

3. (Withdrawn) The method of claim 2, wherein said active agent to lipid ratio is varied by the addition of an empty liposome.

4. (Withdrawn) The method of claim 1, wherein step (b) comprises varying the size of said liposome.

5. (Withdrawn) The method of claim 1, wherein step (b) comprises adding a component that enhances precipitation of said active agent.

6. (Withdrawn) The method of claim 5, wherein said component is a mono-, di-, tri-, or polyvalent anion.

7. (Withdrawn) The method of claim 1, wherein step (b) comprises varying both said active agent to lipid ratio and the size of the liposome.

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8. (Withdrawn) The method of claim 1, wherein said active agent is an antineoplastic drug.

9. (Withdrawn) The method of claim 8, wherein said antineoplastic drug is a camptothecin.

10. (Withdrawn) The method of claim 9, wherein said camptothecin is a member selected from the group consisting of irinotecan, topotecan, 9-amino camptothecin, 10,11-methylenedioxy camptothecin, 9-nitro camptothecin, TAS 103, 7-(4-methyl-piperazino-methylene)-10, 11-ethylenedioxy-20(S)-camptothecin and 7-(2-N-isopropylamino)ethyl)-20(S)-camptothecin.

11. (Withdrawn) The method of claim 10, wherein said camptothecin is topotecan.

12. (Withdrawn) The method of claim 1, wherein said active antineoplastic drug is a vinca alkaloid.

13. (Withdrawn) The method of claim 12, wherein said vinca alkaloid is a member selected from the group consisting of vincristine, vinblastine, vinorelbine and vindesine.

14. (Withdrawn) The method of claim 1, wherein the precipitated active agent encapsulated in said liposome is at least 50% of said total active agent.

15. (Withdrawn) The method of claim 14, wherein the precipitated active agent encapsulated in said liposome is at least 60% of said total active agent.

16. (Withdrawn) The method of claim 15, wherein the precipitated active agent encapsulated in said liposome is at least 70% of said total active agent.

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17. (Withdrawn) The method of claim 1, wherein said liposome comprises sphingomyelin and cholesterol.

18. (Withdrawn) The method of claim 17, wherein said liposome comprises sphingomyelin and cholesterol in a 55:45 ratio.

19. (Withdrawn) The method of claim 1, wherein the plasma circulation half-life of said active agent is modulated for optimum efficacy.

20. (Withdrawn) The method of claim 1, wherein the ratio of said active agent to lipid is about 0.005-1:1 (w/w).

21. (Withdrawn) The method of claim 20, wherein the ratio of said active agent to lipid is about 0.05-0.9:1 (w/w).

22. (Withdrawn) The method of claim 21, wherein the ratio of said active agent to lipid is about 0.1-0.5:1 (w/w).

23. (Withdrawn) A method for modulating the plasma circulation half-life of an active agent, said method comprising:

(a) providing a liposome having free active agent and precipitated active agent encapsulated therein; and

(b) adding a liposome with no encapsulated active agent.

24. (Withdrawn) The method of claim 23, wherein the ratio of liposomes containing active agent to liposomes with no encapsulated agent is from about 1:0.5 to 1:1000.

25. (Withdrawn) The method of claim 24, wherein the ratio of liposomes containing active agent to liposomes with no encapsulated agent is from about 1:1 to 1:100.

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26. (Withdrawn) The method of claim 25, wherein the ratio of liposomes containing active agent to liposomes with no encapsulated agent is from about 1:2 to 1:10.

27. (Withdrawn) The method of claim 26, wherein the ratio of liposomes containing active agent to liposomes with no encapsulated agent is from about 1:3 to 1:5.

28. (Withdrawn) The method of claim 23, wherein said active agent is an antineoplastic drug.

29. (Withdrawn) The method of claim 28, wherein said antineoplastic drug is a camptothecin.

30. (Withdrawn) The method of claim 29, wherein said camptothecin is a member selected from the group consisting of irinotecan, topotecan, 9-amino camptothecin, 10,11-methylenedioxy camptothecin, 9-nitro camptothecin, TAS 103, 7-(4-methyl-piperazino-methylene)-10, 11-ethylenedioxy-20(S)-camptothecin and 7-(2-N-isopropylamino)ethyl-20(S)-camptothecin.

31. (Withdrawn) The method of claim 30, wherein said camptothecin is topotecan.

32. (Previously Presented) A liposomal formulation, said liposomal formulation comprising:

- a) an antineoplastic drug; and
- b) a liposome having free antineoplastic drug and precipitated antineoplastic drug, wherein the precipitated antineoplastic drug in said liposome is at least 50% of the total antineoplastic drug, wherein said liposome comprises sphingomyelin and cholesterol, and wherein said antineoplastic drug is a camptothecin.

33. (Canceled)

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34. (Previously Presented) The liposomal formulation of claim 32, wherein said camptothecin is a member selected from the group consisting of irinotecan, topotecan, 9-amino camptothecin, 10,11-methylenedioxy camptothecin, 9-nitro camptothecin, TAS 103, 7-(4-methyl-piperazino-methylene)-10, 11-ethylenedioxy-20(S)-camptothecin and 7-(2-N-isopropylamino)ethyl)-20(S)-camptothecin.

35. (Original) The liposomal formulation of claim 34, wherein said camptothecin is topotecan.

36. (Currently Amended) A liposomal formulation, said liposomal formulation comprising:

- a) an antineoplastic drug; and
- b) a liposome having free antineoplastic drug and precipitated antineoplastic drug, wherein the precipitated antineoplastic drug in said liposome is at least 50% of the total antineoplastic drug, wherein said liposome comprises sphingomyelin and cholesterol at a ratio in the range of about 75/25 mol%/mol% sphingomyelin/cholesterol to about 35/50 mol%/mol% sphingomyelin/cholesterol, and wherein said antineoplastic drug is a vinca alkaloid.

37. (Canceled)

38. (Original) The liposomal formulation of claim 36, wherein said vinca alkaloid is a member selected from the group consisting of vincristine, vinblastine, vinorelbine and vindesine.

39. (Original) The liposomal formulation of claim 32 wherein the ratio of said antineoplastic drug to lipid is about 0.005-1:1 (w/w).

40. (Original) The liposomal formulation of claim 39, wherein the ratio of said antineoplastic drug: said lipid is about 0.05-0.9:1 (w/w).

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41. (Original) The liposomal formulation of claim 40, wherein the ratio of said antineoplastic drug: said lipid is about 0.1-0.5:1 (w/w).

42. (Canceled)

43. (Previously Presented) The liposomal formulation of claim 32 or 36, wherein said liposome comprises sphingomyelin and cholesterol in a 55:45 molar ratio.

44. (Withdrawn) The liposomal formulation of claim 32, further comprising a liposome with no encapsulated active agent.

45. (Withdrawn) The liposomal formulation of claim 44, wherein the ratio of liposomes containing active agent to liposomes with no encapsulated agent is from about 1:0.5 to 1:1000.

46. (Withdrawn) The liposomal formulation of claim 45, wherein the ratio of liposomes containing active agent to liposomes with no encapsulated agent is from about 1:1 to 1:100.

47. (Withdrawn) The liposomal formulation of claim 46, wherein the ratio of liposomes containing active agent to liposomes with no encapsulated agent is from about 1:2 to 1:10.

48. (Withdrawn) The liposomal formulation of claim 47, wherein the ratio of liposomes containing active agent to liposomes with no encapsulated agent is from about 1:3 to 1:5.

49. (Withdrawn) A liposomal formulation, said liposomal formulation comprising:

a) an active agent;

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b) a liposome having free active agent and precipitated active agent encapsulated therein; and

c) an empty liposome.

50. (Withdrawn) The liposomal formulation of claim 49, wherein the ratio of liposomes containing said active agent to said empty liposomes is from about 1:0.5 to 1:1000.

51. (Withdrawn) The liposomal formulation of claim 50, wherein the ratio of liposomes containing said active agent to said empty liposomes is from about 1:1 to 1:100.

52. (Withdrawn) The liposomal formulation of claim 51, wherein the ratio of liposomes containing said active agent to said empty liposomes is from about 1:2 to 1:10.

53. (Withdrawn) The liposomal formulation of claim 52, wherein the ratio of liposomes containing said active agent to said empty liposomes is from about 1:3 to 1:5.

54. (Withdrawn) The liposomal formulation of claim 49, wherein said active agent is an antineoplastic drug.

55. (Withdrawn) The liposomal formulation of claim 54, wherein said antineoplastic drug is a camptothecin.

56. (Withdrawn) The liposomal formulation of claim 55, wherein said camptothecin is a member selected from the group consisting of irinotecan, topotecan, 9-amino camptothecin, 10,11-methylenedioxy camptothecin, 9-nitro camptothecin, TAS 103, 7-(4-methyl-piperazino-methylene)-10, 11-ethylenedioxy-20(S)-camptothecin and 7-(2-N-isopropylamino)ethyl-20(S)-camptothecin.

57. (Withdrawn) The liposomal formulation of claim 56, wherein said camptothecin is topotecan.

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58. (Withdrawn) The liposomal formulation of claim 57, wherein said antineoplastic drug is a vinca alkaloid.

59. (Withdrawn) The liposomal formulation of claim 58, wherein said vinca alkaloid is a member selected from the group consisting of vincristine, vinblastine, vinorelbine and vindesine.

60. (Withdrawn) The liposomal formulation of claim 49, wherein the ratio of said active agent to lipid is about 0.005-1:1 (w/w).

61. (Withdrawn) The liposomal formulation of claim 60, wherein the ratio of said active agent to lipid is about 0.05-0.9:1 (w/w).

62. (Withdrawn) The liposomal formulation of claim 61, wherein the ratio of said active agent to lipid is about 0.1-0.5:1 (w/w).

63. (Withdrawn) The liposomal formulation of claim 49, wherein said liposome comprises sphingomyelin and cholesterol.

64. (Previously Presented) The liposomal formulation of claim 36, wherein the ratio of said antineoplastic drug to lipid is about 0.005-1:1 (w/w).

65. (Previously Presented) The liposomal formulation of claim 64, wherein the ratio of said antineoplastic drug to said lipid is about 0.05-0.9:1 (w/w).

66. (Previously Presented) The liposomal formulation of claim 65, wherein the ratio of said antineoplastic drug to said lipid is about 0.1-0.5:1 (w/w).

67. (Previously Presented) The liposomal formulation of claim 32 or 36, wherein said liposome comprises sphingomyelin and cholesterol in a 50:50 molar ratio.